

REMARKS

The Office Action mailed August 29, 2003 has been carefully considered. Within the Office Action Claims 7-21 have been rejected. The Applicants have amended Claims 7, 11 and 13 and cancelled Claims 1-6. Reconsideration in view of the following remarks is respectfully requested. A Three Month extension fee has been attached with the transmittal documents accompanying the present Reply.

Election Requirement

A restriction requirement has been imposed by the Examiner and a provisional election was made without traverse to prosecute the invention of claims 7-21 in a telephone conversation between Applicant's prior agent and the Examiner on August 11, 2003 in which Group II was elected and Claims 1-6 were cancelled without prejudice. That provisional election is hereby confirmed. In view of the earlier restriction requirement, the Applicants retain the right to present cancelled Claim 1-6 in continuation and/or divisional applications.

Rejection under U.S.C. § 102

Claims 7-13, 15, and 17-21 stand rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by U.S. Patent No. 5,870,289 to Tokuda et al. (hereinafter "Tokuda"). The Applicant respectfully traverses.

Tokuda discloses a structure for connecting an integrated circuit (IC) to a wiring substrate by a flip-chip bonding using an adhesive film. A direct through-hole connection is formed directly below a connecting pad so as to pass through the adhesive film and the wiring substrate, whereby the direct through hole connection directly connects the connecting pad to the wire.

However, Tokuda does not teach one or more interposer having contact regions facing away in a direction perpendicular to the one surface;

Claim 7 recites, among other things, a plurality of planar interposers parallel to and interspersed with the plurality of planar ICs, each interposer having second contact pads on at least one surface connected to conductive columns, and traces leading to electrical contact regions on an edge at a periphery facing away from the interposer in a direction perpendicular to the one surface; and a plurality of conductive bars external to the interposers and the ICs and extending in a direction orthogonal to the planar ICs and interposers, the conductive bars metallurgically bonded to individual ones of the outward-facing peripheral contact regions. In contrast to Claim 7, Tokuda does not disclose contact regions of the interposer perpendicular to the surface having contact pad. In addition, Tokuda does not teach conductive bars external to the interposers and the ICs which are metallurgically bonded the outward-facing contact regions. Instead, Tokuda merely discloses balls 290 attached to the wires which are parallel to the surface of the chip carriers 250, 260. For at least these reasons, the subject matter claimed in Claim 7 is distinguishable over Tokuda, and Claim 7 is therefore in a condition for allowance.

Claims 8-12 and 21 are dependent on Independent Claim 7. For at least the reasons stated above, Claim 7 is allowable over Tokuda. Accordingly, Claims 8-12 and 21 are allowable for being dependent on Independent Claim 7.

Claim 11 recites, among other things, contact regions facing away from the interposer in a direction perpendicular to the surface on which conductive columns are located, and a plurality of conductive bars external to the ICs and interposers and extending in a direction orthogonal to the planar ICs and interposers, the conductive bars metallurgically bonded to individual ones of the outward-facing peripheral contact regions. In contrast to Claim 11, Tokuda does not disclose contact regions of the interposer perpendicular to the surface having contact pad. In addition,

Tokuda does not teach conductive bars external to the interposers and the ICs which are metallurgically bonded the outward-facing contact regions. Instead, Tokuda merely discloses balls 290 attached to the wires which are parallel to the surface of the chip carriers 250, 260. For at least these reasons, the subject matter claimed in Claim 11 is distinguishable over Tokuda, and Claim 11 is therefore in a condition for allowance.

Claims 13 recites, among other things, metal contact pads and traces formed on a surface of a non-conductive sheet, including openings through the non-conductive sheet to expose regions of conductive contact pads or traces; and contact regions implemented at a periphery of the non-conductive sheet, connected to traces on the sheet, and facing outward in a direction perpendicular to the surface of the non-conductive sheet. In contrast to Claim 13, Tokuda does not disclose contact regions of the interposer facing outward in a direction perpendicular to the surface having contact pads. For at least these reasons, the subject matter claimed in Claim 13 is distinguishable over Tokuda, and Claim 13 is therefore in a condition for allowance.

Claims 15 and 17 are dependent on Independent Claim 13. For at least the reasons stated above, Claim 13 is allowable over Tokuda. Accordingly, Claims 15 and 17 are allowable for being dependent on Independent Claim 13.

Claim 18 recites, among other things, an interposer formed of a length of foldable non-conductive material, folded to progressively space apart adjacent ones of the planar ICs in order, the folded interposer having second contact pads on at least one surface connected to the conductive columns of the plurality of ICs. In contrast to Claim 18, there is no hint, teaching or suggestion in Tokuda to use an interposer folded to progressively space apart adjacent planar ICs. For at least these reasons, the subject matter in Claim 18 is distinguishable over Tokuda, and Claim 18 is therefore in a condition for allowance.

Claim 20 is dependent on Independent Claim 18. For at least the reasons stated above, Claim 18 is allowable over Tokuda. Accordingly, Claim 20 is allowable for being dependent on Independent Claim 18.

Rejection under 35 U.S.C. § 103

Claims 14 and 16 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Tokuda. This rejection is respectfully traversed.

Claims 14 and 16 are dependent on Independent Claim 13. For at least the reasons stated above, Claim 13 is allowable over Tokuda. Accordingly, Claims 14 and 16 are allowable for being dependent on Independent Claim 13.

Conclusion

It is believed that this reply places the above-identified patent application into condition for allowance. Early favorable consideration of this reply is earnestly solicited.

If, in the opinion of the Examiner, an interview would expedite the prosecution of this application, the Examiner is invited to call the undersigned attorney at the number indicated below.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case. Please charge any additional required fee or credit any overpayment not otherwise paid or credited to our deposit account No. 50-1698.\

Respectfully submitted,

THELEN REID & PRIEST, LLP

Dated: 4/4/06



Suvashis Bhattacharya
Reg. No. 46,554

Thelen Reid & Priest LLP
P.O. Box 640640
San Jose, CA 95164-0640
Tel. (408) 292-5800
Fax. (408) 287-8040